

Flight Scientist Report  
Tuesday 5/25/2021 ACTIVATE RF72

Flight Type: Statistical Survey Flight  
Flight Route: ECG-OXANA-32N074W-OXANA-ECG  
Special Notes:

### **King Air**

Pilot report (Wusk): Takeoff 1156 L

Land 1520 L

3.4 hours

Science flight for the UC-12 in support of ACTIVATE, conducted cooperatively with the HU-25. One flight day. Departed Rwy08, IFR routed to the North and west on departure, eventual turn to ECG climbing to FL270. Planned route ECG-OXANA-32N074W-OXANA-ECG, researchers requested change of Waypoint to 32N073W enroute. Coordinated change with Washington, also got FL280 headed out to OXANA. Winds were out of the north at ~20-30kts at altitude. Aircraft geolocation was generally within ~10-20 nmi during the flight. Remained at FL280 until 15nm south of ECG. All objectives were achieved with no aircraft discrepancies noted. Crew was Thorson, Wusk, Seaman. Aircraft should be ready for planned two-flight day on Wednesday.

Flight scientist report ():

### **Falcon**

Pilot report (Delaney): Some overcast conditions locally, but generally a good flight day offshore.

Takeoff: 1159 / Land: 1517 (EDT) / 3.3 hours

Science flight for the HU-25 in support of ACTIVATE Campaign #4, conducted cooperatively with the UC-12. Departed Rwy08 with circuitous vectors to the west around ORF airspace/corridors, climbing to 5k ft MSL for initial transit. Winds were light (~10 kts) out of the northwest at altitude and shifted to the southeast near OXANA. Research profiles were conducted to ECG with an overcast layer from 2000 – 5000 ft MSL. From ECG outbound to OXANA the clouds thinned out to a scattered layer at ~2000 ft that gave way to intermittent clear air bands during transit to the turn-around point. Both Cloud and Clear air modules were executed throughout flight from 500 – 7000 ft MSL, as conditions warranted. Turn-around was conducted ~30 nmi prior to the planned location (32N73W) due to fuel considerations. During RTB, IMC conditions prevented meaningful data collection overland, therefore an IFR pickup was requested with vectors to ILS Rwy08 for approach and landing. Aircraft geolocation was

within 20 nmi and under ~10 nmi throughout most of the data collection effort. All objectives were achieved and with no discrepancies noted.

Pilots: Thorson/Delaney

QNCs: Crosbie/Winstead

Flight scientist report (Crosbie):

I did not have anything noted about this flight that was particularly remarkable. We conducted a higher than normal ACT leg during the 3<sup>rd</sup> cloudy module because we were informed of elevated aerosol by HSRL. Because the low clouds were very sparse, we decided to perform another climb to the aerosol layer in the next module (part cloudy) but descended immediately because low clouds resumed.

Eddie notes:

Takeoff: 16:00:04

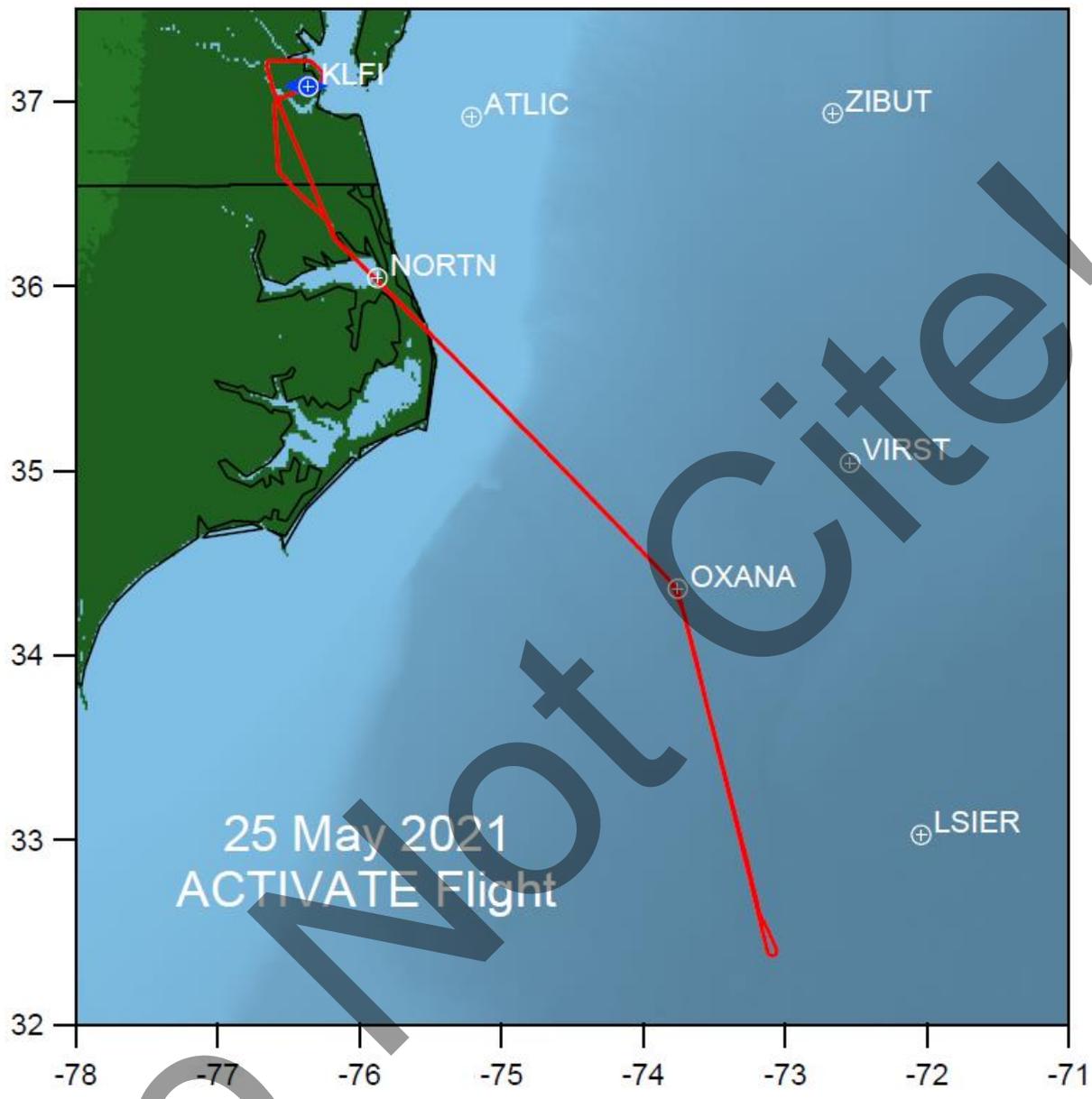
Landing: 19:15:03

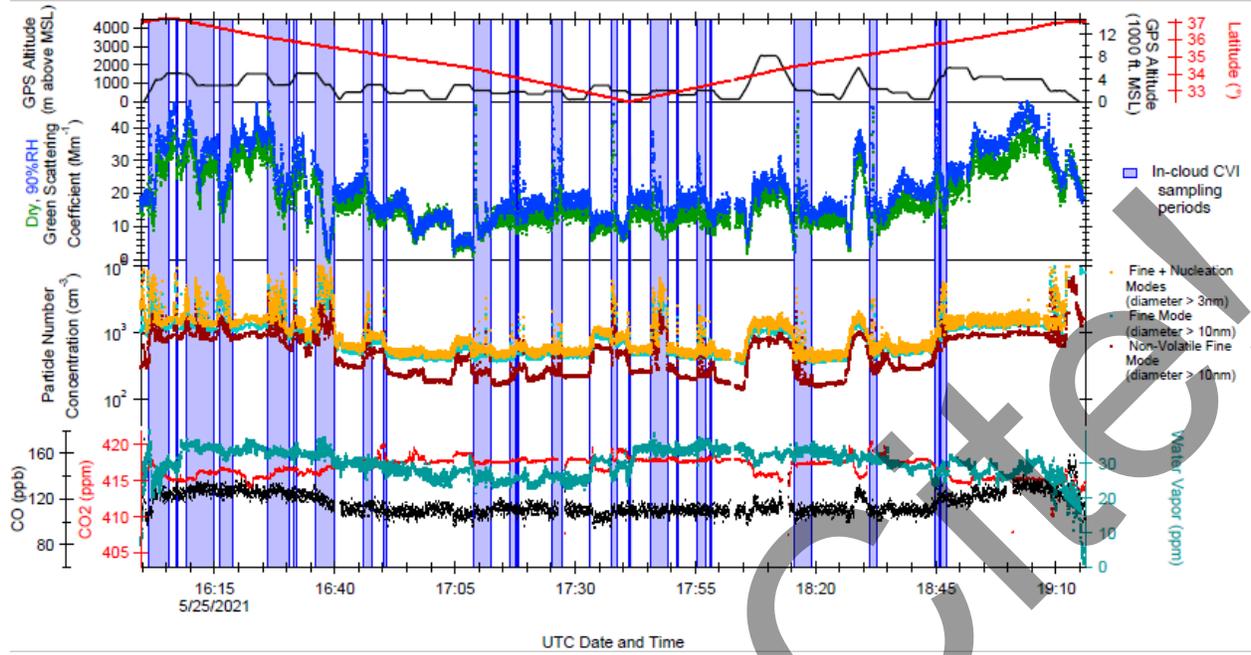
16:01:20 In clouds right after takeoff

17:42 Turned for RTB early because of fuel

18:07 Climbing to find aerosol layer seen by HSRL

18:08:50 In aerosol layer at 8000 ft





Do Not

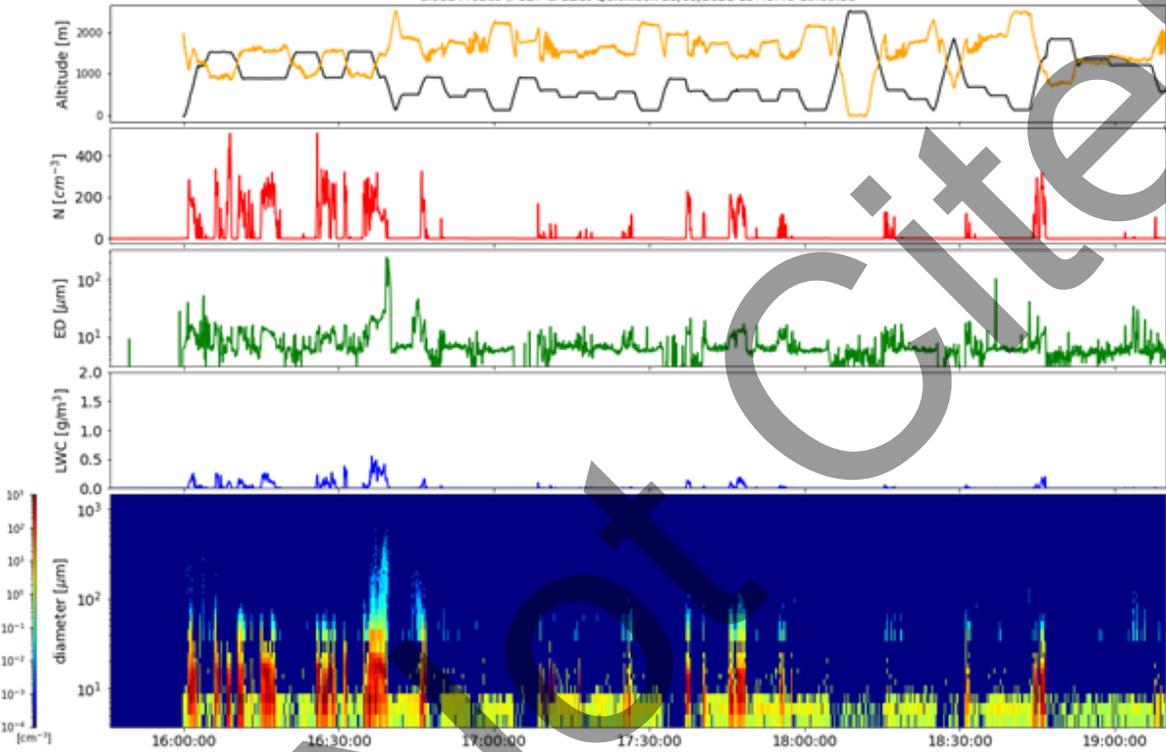
# Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



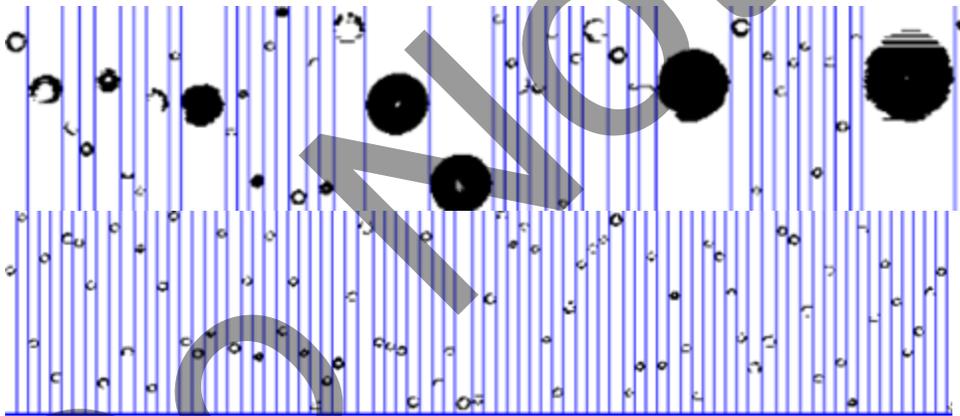
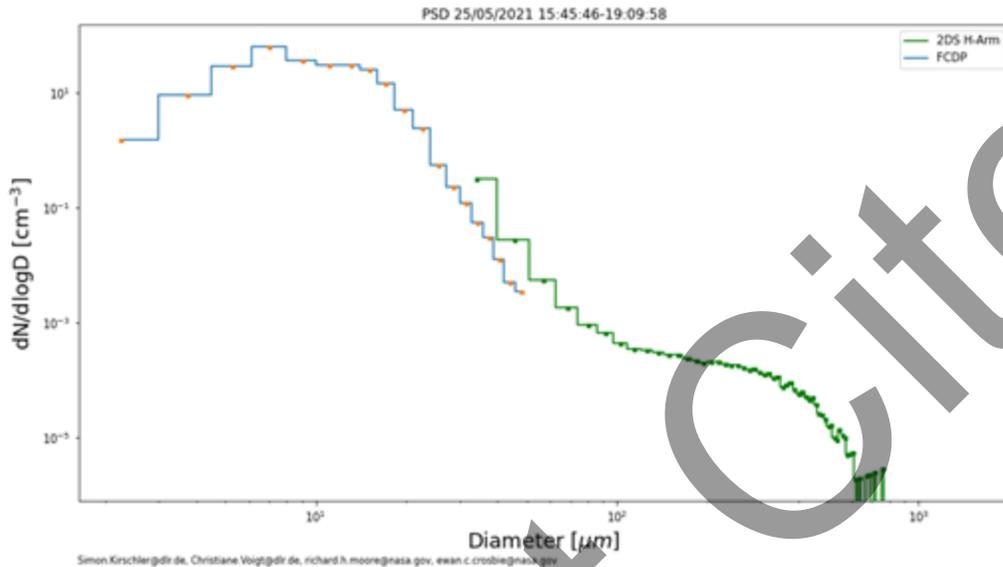
Cloud Probes (FCDP & 2DS) Quicklook 25/05/2021 15:45-19:09:58



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# PSD ACTIVATE

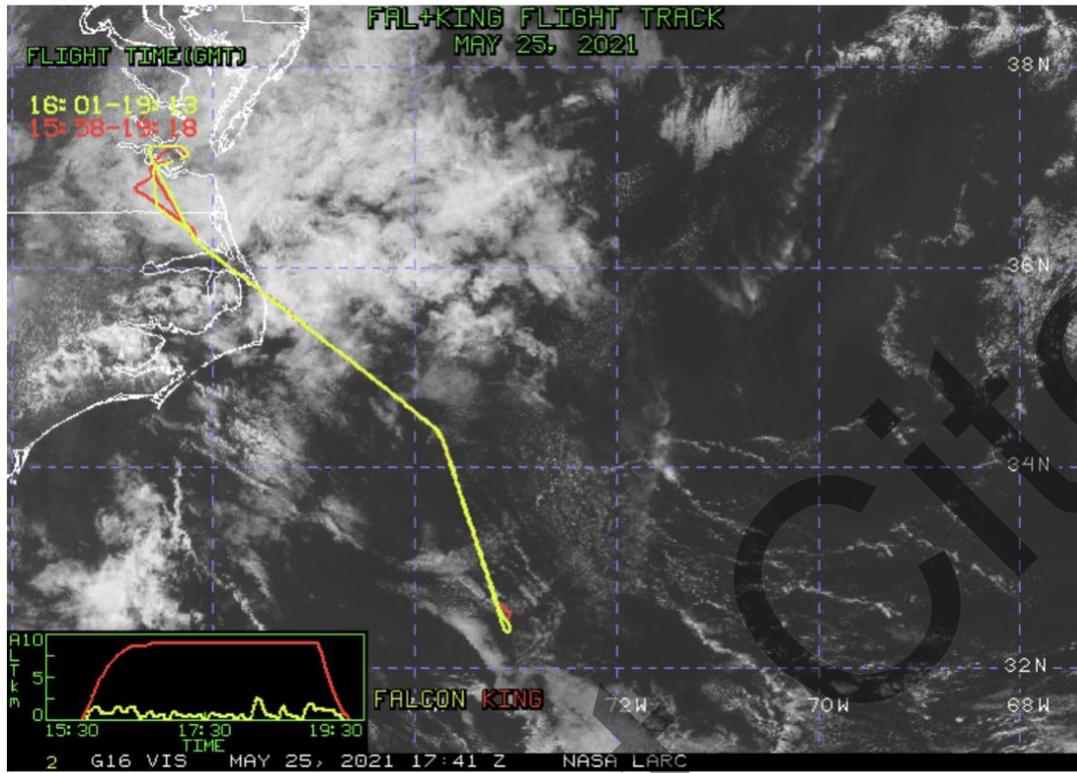
preliminary data, only for quicklook use  
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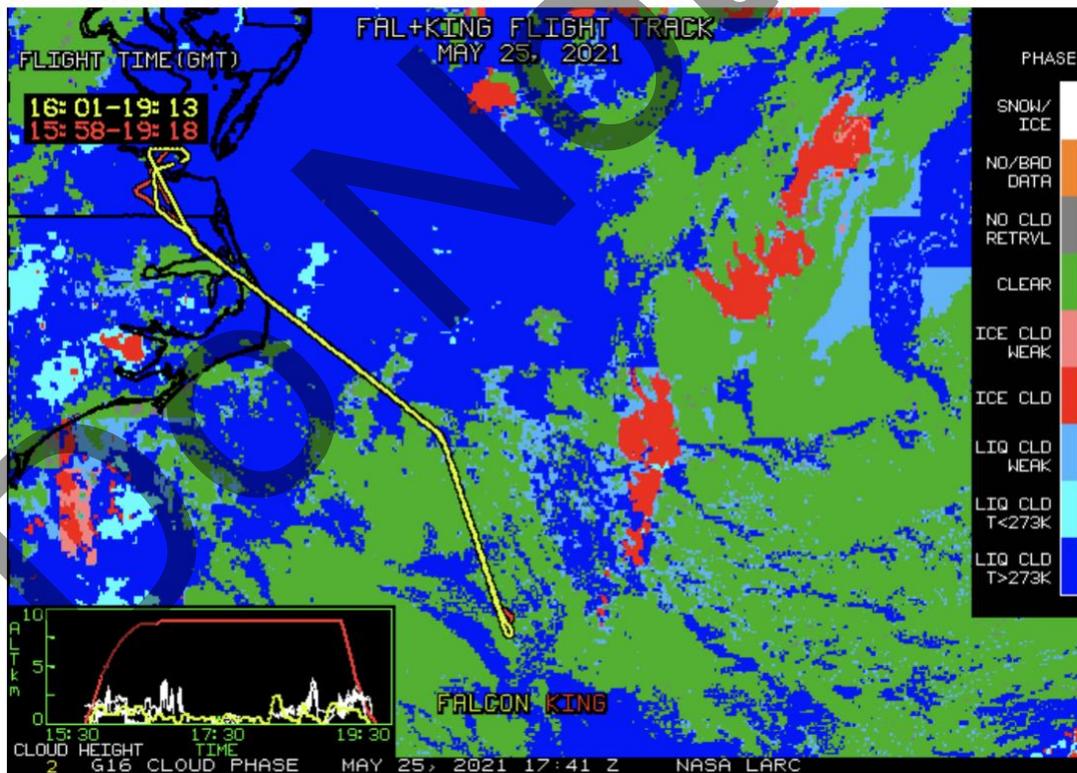
Pure liquid clouds. Rain/precip encountered ~ 16:00 and 16:40 UTC.

NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 72, 17:41 UTC May 25, 2021

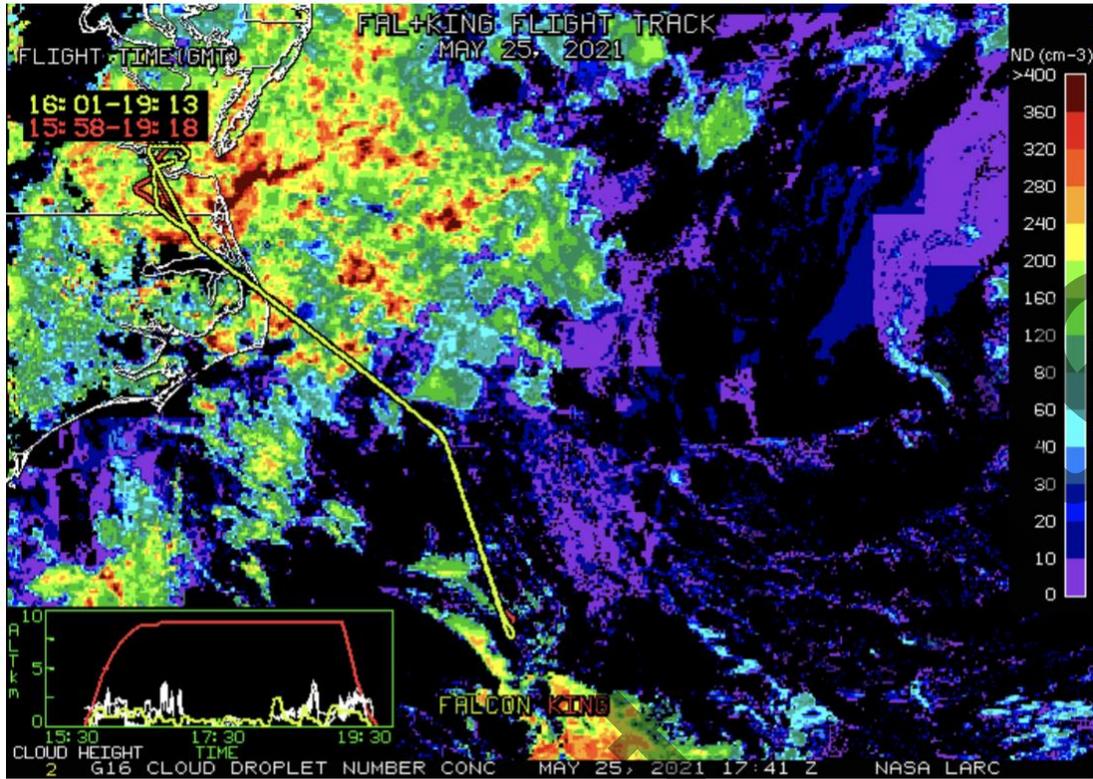
Visible Image



Cloud Phase



### Cloud Droplet Number Concentration (cm-3)



### Cloud-Top Height (Kft-ASL)

